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20486A: Developing ASP.NET MVC 4 Web Applications

Days of Training: 5 Days

Prerequisites: Before attending this course, students must have: A minimum of two to three years of experience developing web-based applications by using Microsoft Visual Studio and Microsoft ASP.NET, proficiency in using the .NET Framework, and some familiarity with the C# language.

At Course Completion
After completing this course, students will be able to:
- Describe the Microsoft Web Technologies stack and select an appropriate technology to use to develop any given application.
- Design the architecture and implementation of a web application that will meet a set of functional requirements, user interface requirements, and address business models.
- Create MVC Models and write code that implements business logic within Model methods, properties, and events.
- Add Controllers to an MVC Application to manage user interaction, update models, and select and return Views.
- Create Views in an MVC application that display and edit data and interact with Models and Controllers.
- Run unit tests and debugging tools against a web application in Visual Studio 2012 and configure an application for troubleshooting.
- Develop a web application that uses the ASP.NET routing engine to present friendly URLs and a logical navigation hierarchy to users.
- Implement a consistent look and feel, including corporate branding, across an entire MVC web application.
- Use partial page updates and caching to reduce the network bandwidth used by an application and accelerate responses to user requests.
- Write JavaScript code that runs on the client-side and utilizes the jQuery script library to optimize the responsiveness of an MVC web application.
- Implement a complete membership system in an MVC 4 web application.
- Build an MVC application that resists malicious attacks and persists information about users and preferences.
- Describe how to write a Windows Azure web service and call it from and MVC application.
- Describe what a Web API is and why developers might add a Web API to an application.
- Modify the way browser requests are handled by an MVC application.
- Describe how to package and deploy an ASP.NET MVC 4 web application from a development computer to a web server for staging or production.

Course Outline

Module 1: Exploring ASP.NET MVC 4
- Overview of Microsoft Web Technologies
- Overview of ASP.NET 4.5
- Introduction to ASP.NET MVC 4

Module 2: Designing ASP.NET MVC 4 Web Applications
- Planning in the Project Design Phase
- Designing Models, Controllers, and Views

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Module 3: Developing ASP.NET MVC 4 Models
- Creating MVC Models
- Working with Data

Module 4: Developing ASP.NET MVC 4 Lessons
- Writing Controllers and Actions
- Writing Action Filters

Module 5: Developing ASP.NET MVC 4 Views
- Creating Views with Razor Syntax
- Using HTML Helpers
- Reusing Code in Views

Module 6: Testing and Debugging ASP.NET MVC 4 Web Applications
- Unit Testing MVC Components
- Implementing an Exception Handling Strategy

Module 7: Structuring ASP.NET MVC 4 Web Applications
- Analyzing Information Architecture
- Configuring Routes
- Creating a Navigation Structure

Module 8: Applying Styles to ASP.NET MVC 4 Web Applications
- Using Template Views
- Applying CSS to an MVC Application
- Creating an Adaptive User Interface

Module 9: Building Responsive Pages in ASP.NET MVC 4 Web Applications
- Using AJAX and Partial Page Updates
- Implementing a Caching Strategy

Module 10: Using JavaScript and jQuery for Responsive MVC 4 Web Applications
- Rendering and Running JavaScript Code
- Using jQuery and jQueryUI

Module 11: Controlling Access to ASP.NET MVC 4 Web Applications
- Implementing Authentication and Authorization
- Assigning Roles and Membership

Module 12: Building a Resilient ASP.NET MVC 4 Web Application
- Developing Secure Sites
- State Management

Module 13: Using Windows Azure Web Services in ASP.NET MVC 4 Web Applications
- Introduction to Windows Azure
- Designing and Writing Windows Azure Services
- Consuming Windows Azure Services in a Web Application

Module 14: Implementing Web APIs in ASP.NET MVC 4 Web Applications
- Developing a Web API
- Calling a Web API from Mobile and Web Applications

Module 15: Handling Requests in ASP.NET MVC 4 Web Applications
- Using HTTP Modules and HTTP Handlers
- Using Web Sockets

Module 16: Deploying ASP.NET MVC 4 Web Applications
- Deploying Web Applications
- Deploying MVC 4 Applications

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